

1 IN THE SUPERIOR COURT FOR THE STATE OF CALIFORNIA  
 2 CITY AND COUNTY OF SAN FRANCISCO  
 3 \*\*\*\*\*  
 4 LESLIE WHITELEY, et al., \*  
 5 Plaintiffs, \*  
 6 -vs- \* Case Number  
 7 RAYBESTOS-MANHATTAN, INC., et al., \* 303184  
 8 Defendants. \*  
 9 \*\*\*\*\*

10 TELEPHONIC VIDEOTAPED DEPOSITION OF  
 11 RICHARD A. CARCHMAN, Ph.D.  
 12 February 24, 2000  
 13 10:00 a.m. - 12:06 p.m.  
 14 Richmond, Virginia  
 15  
 16  
 17 Halasz Reporting & Video  
 18 Post Office Box 1644  
 19 Richmond, Virginia 23218-1644  
 20 (804) 979-9004  
 21  
 22  
 23

24 REPORTED BY: Gwenda E. Applegate, RPR, CRR  
 25

HALASZ REPORTING & VIDEO

1 Telephonic Videotaped Deposition of RICHARD A.  
 2 CARCHMAN, Ph.D., taken and transcribed on behalf of  
 3 the Plaintiffs, by and before Gwenda E. Applegate,  
 4 Court Reporter, Notary Public in and for the  
 5 Commonwealth of Virginia at large, pursuant to the  
 6 Rules of the Superior Court of the State of  
 7 California, and by Notice to Take Depositions;  
 8 commencing at 10:06 a.m., February 24, 2000, at the  
 9 offices of Hunton & Williams, 951 East Byrd Street,  
 10 Richmond, Virginia.

11 APPEARANCES OF COUNSEL:

12 SPOHRER & WILNER  
 13 444 East Duval Street  
 14 Jacksonville, Florida 32202  
 15 BY: NORWOOD WILNER, ESQ., (By Telephone)  
 16 Counsel for the Plaintiffs

17 HUNTON & WILLIAMS  
 18 Riverfront Plaza, East Tower  
 19 951 East Byrd Street  
 20 Richmond, Virginia 23219-4074  
 21 BY: THOMAS G. SLATER, JR., ESQ.,  
 22 Counsel for the Defendants

23 ALSO PRESENT: GEORGE HALASZ, Videographer  
 24  
 25

1 I N D E X

2 WITNESS:

3 RICHARD A. CARCHMAN, Ph.D.

4 Examination by Mr. Wilner.....4

5

6

7

8 E X H I B I T S

9 NUMBER

DESCRIPTION

MARKED:

10 (NONE)

11 \* \* \* \* \*

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 (February 24, 2000, 10:06 a.m.)

2

3

PROCEEDINGS

4 THE VIDEOGRAPHER: Today is February 24,  
5 2000. The time is approximately 10:06 a.m. We are  
6 on the record for Dr. Carchman's deposition. Will  
7 plaintiff's counsel please introduce himself.

8 MR. WILNER: I'm Norwood Wilner, attorney  
9 for plaintiff.

10 THE VIDEOGRAPHER: Counsel for the  
11 defendant?

12 MR. SLATER: My name is Tom Slater, counsel  
13 for Philip Morris.

14 THE VIDEOGRAPHER: Will you please swear in  
15 the witness.

16

17

18

19

20

21

22

23

24

25

RICHARD A. CARCHMAN, Ph.D.  
was sworn and testified as follows:

E X A M I N A T I O N

BY MR. WILNER:

Q Dr. Carchman, can you hear me?

A Yes, sir.

Q Has your employment status changed since  
you testified in Memphis?

A No, sir.

1 Q I'll be asking you some questions, and some  
2 of it will be a follow up to your testimony in  
3 Memphis. Have you obtained a copy of your, a  
4 printed copy of your testimony in Memphis at any  
5 time?

6 A I don't believe so.

7 Q Well, let me start with this. You

8 testified in Memphis about various subjects,  
9 including cigarette design, carcinogenicity and  
10 research practices of Philip Morris; did you not?

11 A Yes, sir.

12 Q Now, I have a few issues that I want to  
13 explore with you with respect to those topics.

14 Do you -- is it, is it presently your position  
15 that gas phase ciliatoxins are a health hazard in  
16 commercial cigarettes manufactured by Philip Morris?

17 A They can be.

18 Q Has Philip Morris, to your knowledge,  
19 conducted tests which would determine or, if not  
20 determine, would at least explore the amount of such  
21 hazard if it exists?

22 A I am aware of some studies that Philip  
23 Morris funded and may have actually carried out part  
24 themselves with regard to that question.

25 Q And were they funded in this country or  
HALASZ REPORTING & VIDEO

6

1 in -- or abroad?

2 A Both.

3 Q Is the results from those studies published  
4 in the public literature?

5 A I believe some of them are. The rest are  
6 contained in Philip Morris research and development  
7 reports and documents.

8 Q All right. And if I wanted to identify  
9 those studies relating to gas phase ciliatoxins that  
10 are not in the published literature, by what method  
11 or in what phrase would I identify these?

12 A I think as you've asked the question with  
13 regard to ciliatoxins, you should get a number of  
14 hits.

15 Q And when you say hits, you mean hits on  
16 some kind of a database?

17 A Yes, sir.

18 Q What database were you referring to?

19 A Within the central files documentariament  
20 at Philip Morris.

21 Q Okay. And so I'm clear on that, that would  
22 not be necessarily the public documents database  
23 known as tobacco archives or Philip Morris' subset  
24 of that; is that right?

25 A I don't, I don't know the answer to that  
HALASZ REPORTING & VIDEO

7

1 question, Mr. Wilner.

2 Q You don't know whether there -- they have  
3 been, those studies have been shared with the public  
4 by virtue of that website or not?

5 A I have no way of knowing one way or the  
6 other.

7 Q When you say hits, get hits on it, do you  
8 mean search by subject?

9 A I believe if you put in ciliatoxins, a  
10 number of reports will come up with dates by month  
11 and year, by author, that is who wrote the report,  
12 and whoever it sent it to and who was copied on it.  
13 And my recollection is it should also contain data  
14 that were obtained and represented in that report.  
15 And you might even get, though I have never done  
16 this, might actually also get the numbers for the

17 data books in which the original data was collected.  
18 So you could very well get both things that would  
19 indicate or point to the original source of the data  
20 as well as the reports that were derived from that  
21 information.

22 Q And would -- if those are currently in the  
23 public domain, and I understand that would be  
24 something I could do immediately if they were, if  
25 they were not, are you saying that Philip Morris'

HALASZ REPORTING & VIDEO

8

1 practices would permit me or someone in my position  
2 to access this information?

3 A I, I would suppose so. But I guess we  
4 would have to ask somebody who's currently an  
5 employee of the company how to do that.

6 Q Okay. I'm presently up on Philip Morris'  
7 tobacco archives website, and so I'm going to put in  
8 gas phase ciliatoxins and see what happens and I'll  
9 tell you; okay?

10 A Thank you.

11 Q Give me a second, it's a pretty good  
12 connection. Okay. I put in the word gas phase  
13 ciliatoxins, TOX -- let me make sure I get it right.  
14 Didn't get anything on that, but let me try it  
15 again. Gas phase ciliatoxins, I didn't get any  
16 documents.

17 MR. SLATER: Let me just --

18 BY MR. WILNER:

19 Q Do you have any recommendations on how I  
20 should perform that search?

21 MR. SLATER: Before we go to the -- that's  
22 really not a question. I think clearly that's  
23 objectionable, to be making a statement on the  
24 record of what you did or didn't get by putting in  
25 whatever you put in, Mr. Wilner. So I object to

HALASZ REPORTING & VIDEO

9

1 that statement and ask that it be stricken.

2 BY MR. WILNER:

3 Q All right. Well, Dr. Carchman, can you  
4 give me a recommendation of what to search for in  
5 the Philip Morris site here to -- if any are  
6 contained in the public domain?

7 A Well, if you were to put -- you put in gas  
8 phase and ciliatoxin, and I'm assuming that if  
9 either one of those came up, or would you have to  
10 have both to get a hit?

11 Q You would have to know I guess how that  
12 website is set up. But I just put in ciliatoxin  
13 alone and I didn't get any hit with that either.

14 MR. SLATER: Again, let me just object to  
15 that statement on the record and ask that it be  
16 stricken for the reasons previously stated.

17 BY MR. WILNER:

18 Q Do you -- have you ever done this yourself?

19 A No, I haven't.

20 Q All right. So is there another database  
21 other than tobacco archives.com that would be  
22 accessible perhaps to people inside Philip Morris  
23 but not to the general public?

24 A I, I can't answer all of, all of that.

25 This is sort of a multi-tiered question. All I can

1 tell you is I have reviewed Philip Morris internal  
2 documents from central files that dealt with tests  
3 on cilia toxicity. I've seen the reports.

4 Q Okay. What do you suppose the earliest  
5 investigation was by Philip Morris into this  
6 question?

7 A I, I can't give you a date certain. But it  
8 was long before I got there.

9 Q Now, can you tell me of any commercial --  
10 of any changes in commercial products sold by Philip  
11 Morris that were done as a result of these tests on  
12 gas phase ciliatoxins?

13 A The -- there are two things that come to  
14 mind. That's not meant to be an answer that is  
15 exhaustive in its, in its scope. But there are two  
16 things that strike me. Probably the most evident is  
17 the work that has been going on related to the  
18 electrically heated cigarette and the introduction  
19 of some materials that are specifically directed at  
20 reducing some of these materials from the gas phase.  
21 And it is analogous to a commercial product that  
22 Philip Morris has or had, I'm not sure whether it's  
23 still on, still on the market, that had a related  
24 material in the filter that could reduce some of  
25 these, some of these materials.

1 Q All right. Let me see if I understand  
2 that. The first commercial modification had to do  
3 with the electrically heated cigarette which you've  
4 previously testified about, the Acord; is that  
5 right?

6 A No, I didn't say the first. I just said  
7 the first that I can, can recall. And I think I  
8 said that there were some other products, and if I  
9 wasn't clear I apologize, that preceded the work  
10 going on with the electrically heated cigarette that  
11 was in the commercial, commercial marketplace.

12 Q Okay. So let me explore that. Now, you  
13 said some materials that are -- that might reduce  
14 the material in the gas phase. What materials are  
15 you talking about?

16 A These are -- and I'm not specifically  
17 talking about charcoal. This would be another  
18 material that would be found in I believe what is  
19 called a plug-space-plug filter. And in what would  
20 normally be the space, some materials were put in  
21 that had some degree of specificity for binding some  
22 of these gas phase components. And we have  
23 basically taken that technology and are looking at  
24 it right now within the electrically heated  
25 cigarette but also within the possibility of using

1 that in other commercial products, more, the more  
2 conventional type cigarettes as well.

3 But it's, it is a derivative, if you will, of  
4 that, of that work.

5 Q Right. And what materials are you talking  
6 about?

7 A As far as I know, they're, they're

8 proprietary, proprietary materials, so I'm not  
9 exactly sure what I could say about them. We  
10 haven't published in the scientific literature to my  
11 knowledge on the, the version that I'm talking about  
12 now.

13 Q And so these proprietary materials would  
14 have an ability to selectively adsorb certain gas  
15 phase components that were thought to play a role in  
16 cilia toxicity; is that true?

17 A Selectivity is, as you know, sort of a  
18 funny word. I would basically say they appear to  
19 have a preference for the kinds of materials that I  
20 believe we're talking about.

21 Q And what are those kinds of materials, not  
22 the ones in the filter that you didn't want to  
23 identify, but the ones in the smoke?

24 A They're generally in the family of  
25 compounds called aldehydes.

HALASZ REPORTING & VIDEO

13

1 Q Now, could you tell me any modifications to  
2 cigarettes which have actually been sold as opposed  
3 to those which might be under research development  
4 which have -- which modifications have been designed  
5 to reduce or eliminate gas phase ciliotoxins?

6 A There are two, two general ones that exist  
7 or have existed in the commercial marketplace. One  
8 is a charcoal filter and the other is the use of a  
9 relative, if you will, of this material in the  
10 plug-space-plug configuration of this Philip Morris  
11 product that either was, was sold or is being sold  
12 now. I am not as up to speed on this as I was  
13 several years ago.

14 Q Well, what, what is the commercial  
15 product's name that either was sold or is being  
16 sold?

17 A I can't recall it at this time, Mr. Wilner.

18 Q Is it a type of a brand of a cigarette or  
19 is it something completely different?

20 A I would -- my recollection is, is such, I  
21 would probably not feel comfortable -- I just don't  
22 remember. I think it's a brand but I'm not sure.

23 Q You also mentioned a charcoal filter. Now,  
24 did, did Philip Morris produce cigarettes with  
25 charcoal filters?

HALASZ REPORTING & VIDEO

14

1 A My belief is they still do.

2 Q And what cigarettes are those?

3 A Again, I am the wrong person to ask about  
4 what's on the commercial, what's on the commercial  
5 market.

6 Q Has Philip Morris tested these cigarettes  
7 with charcoal filters to determine if they do, in  
8 fact, reduce gas phase ciliotoxins?

9 A I'm not, I'm not sure at this point in time  
10 what was used in the ciliotoxin work that Philip  
11 Morris was, was involved in. But I do know that in  
12 terms of smoke chemistry that -- and some biological  
13 tests, that the activity of those kinds of products  
14 was, was evaluated. And some of that is more  
15 recent, more recent work. And that work that I'm  
16 somewhat familiar with was carried out at INBIFO.

17 Q Can you identify any of the principal  
18 investigators at Philip Morris who were involved  
19 with ciliatoxin work?

20 A The, the people from the earlier documents  
21 that I was referring to that you were unsuccessful  
22 in identifying in your electronic search were people  
23 who have long retired from the company. And I have  
24 an image in my mind of one of the principals and  
25 their first name, but I can't recall, I can't recall

HALASZ REPORTING & VIDEO

15

1 their last name at, at this time. It might, it  
2 might, it might come to me later on.

3 In terms of the, the more recent work I am  
4 talking about, it would be Dr. Reininghause would be  
5 the name that I would, I would use to start my  
6 search. And it would be located in their  
7 documentarium, in their archival system.

8 Q "Their," who is "their?"

9 A INBIFO's. I'm sorry.

10 Q All right. And, and you said you knew  
11 somebody's first name. What name was that?

12 A Lou.

13 Q Lou?

14 A Lou.

15 Q And --

16 A Yes. I have his, his image in my mind, and  
17 maybe his name will come to me hopefully before this  
18 is, before this is over.

19 Q And the time period that Lou would have  
20 been working on this would have been, what, the  
21 '70s? The '80s? The '90s? The '60s?

22 A As I said, that work preceded my arrival  
23 in, in the company and I don't have a date certain  
24 in my mind. So it would be before the middle to  
25 late '80s.

HALASZ REPORTING & VIDEO

16

1 Q Before the middle to late '80s. Thank you.  
2 Have you ever heard of Reynolds, an RJ Reynolds  
3 cigarette known as Project EB?

4 A No, sir.

5 Q Do you know what a carbon scrubber filter  
6 is?

7 A I've heard the term used before.

8 Q Now, in what way?

9 A It --

10 Q What is it according to you?

11 A It is a carbon based filter that has an  
12 ability in terms of the use of the word scrub to  
13 remove, remove materials. And I think I have seen  
14 some publications from Reynolds in which they did  
15 some comparative work with that, but that was a  
16 while ago. And I think that's at this point,  
17 without having any documents in front of me, my  
18 recollection is I've seen some work, it was  
19 published either in, in a report, publicly available  
20 report or book or scientific paper.

21 Q Has -- have you personally evaluated the  
22 effectiveness of carbon scrubber filters for  
23 reducing gas phase ciliatoxins?

24 A I personally have, have not. I don't know  
25 at this moment to what extent Philip Morris has

1 other than to say that Philip Morris has over the  
2 years evaluated a variety of different kinds of  
3 filter materials, including a variety of different  
4 kinds of charcoal type filters.

5 Q Is it, is it your position that the control  
6 or reduction of gas phase ciliatoxins in commercial  
7 products is impossible or infeasible?

8 MR. SLATER: Could you read that back,  
9 please, Madam court reporter.

10 (Record read)

11 THE WITNESS: I don't know how to, to  
12 answer such a, such a broad question in terms of  
13 dealing with something that's impossible. I would  
14 say clearly it is a difficult, a difficult task, and  
15 some people have achieved different degrees of  
16 significant reductions as we have for some of these  
17 materials in our electrically heated product but not  
18 for, not for others.

19 So I would try not to use the word  
20 impossible in any, any scientific conversation I  
21 would, I would have.

22 BY MR. WILNER:

23 Q Has the -- has control of gas phase  
24 ciliatoxins been a design feature of the Marlboro  
25 cigarette, to your knowledge?

1 A If, if by design feature you're asking me  
2 has it been specifically targeted, I think the  
3 answer is best addressed by, by saying to the extent  
4 possible Philip Morris' approach is to try to reduce  
5 as many different kinds of things as possible since  
6 nobody is really sure, of the things that are found  
7 in smoke, which, which may really be responsible for  
8 the adverse effects that have been associated with,  
9 with smoking.

10 So we have tried to take, to the extent possible,  
11 a more generalized, a more generalized approach in  
12 trying to reduce, to reduce everything.

13 Q I understand that. I'm talking about  
14 specifically now -- we've been having this  
15 conversation on gas phase ciliatoxins and specific  
16 design elements in the cigarette which reduce or  
17 eliminate them. So I'm asking for, specifically for  
18 Marlboro, can you cite me specific design elements  
19 with that design -- with that target in mind?

20 MR. SLATER: Let me just object. I think  
21 the question has already been answered in the  
22 previous answer, but go ahead, sir.

23 THE WITNESS: Again, our approach has been,  
24 has been general and in terms of reduction. And so  
25 to the extent that aldehydes, which are the family

1 of materials we're talking about, have been  
2 modulated, it would carry along with it. But  
3 specifically to target those materials, I would say  
4 I am not aware of that, though there may, may be.

5 BY MR. WILNER:

6 Q Well, okay. You said to the extent that  
7 aldehydes had been modulated. To what extent have



8 aldehydes been modulated?

9 A As I said before, some aldehydes, if I  
10 look, for example, at data that I am more recently  
11 familiar with, if I look at the electrically heated  
12 cigarette, all but one of the aldehydes are reduced,  
13 some quite significantly. One actually goes, goes  
14 up compared to a controlled, a controlled product.  
15 So that is one of the examples that I have that is  
16 relatively fresh in my mind in terms of data. So  
17 for acid aldehyde and acrolein, those levels in the  
18 electrically heated cigarette are reduced, but  
19 formaldehyde, on the other hand, goes up. And we --  
20 as I indicated, we are attempting to try to bring  
21 that formaldehyde level down with this modification  
22 of the filter with this new material, and that  
23 should result even in a further reduction of the  
24 other aldehydes.

25 I can tell you that technically we've been able  
HALASZ REPORTING & VIDEO

20

1 to do it. Now the question is to try to implement,  
2 implement it in the, in the commercial marketplace.

3 Q All right. Well I am -- I was -- let me  
4 see if I can direct the question back to Marlboros.  
5 Have aldehydes been modulated in commercially sold  
6 Marlboro cigarettes?

7 A Only, only as my answer relates to the  
8 general changes that apply across all of Philip  
9 Morris' filtered cigarette products.

10 Q All right. And what do you mean by -- what  
11 general changes do you mean?

12 A Well, I think since the, the 1950s a  
13 variety of technical changes have been advanced.  
14 The vast majority have been summarized in a number  
15 of publications. Probably the most pertinent one  
16 would be in Hoffman and Hoffman, Changing Cigarette  
17 FTC Monograph Number 7. I don't remember the  
18 chapter name, but they have a very nice picture of  
19 the modifications done to the cigarette and some of  
20 the impacts. And within that chapter, I believe --  
21 not I believe. I know they have looked at specific  
22 cigarette and tobacco components and looked at the  
23 impact of those in a variety of, of smoke  
24 chemistries, whether it's expanded tobacco or  
25 different kinds of reconstituted sheet material or

HALASZ REPORTING & VIDEO

21

1 paper porosity. If I had the chapter in front of  
2 me, it would go, it would go a lot easier. But  
3 they're all I think accurately described by  
4 Dr. Hoffman and his wife in that particular chapter.  
5 And aside from one or two omissions, I think it is a  
6 complete and accurate portrayal of the modifications  
7 that have taken place in the product in the last 40  
8 or 50 years.

9 Q Dr. Hoffman also portrays that the level of  
10 NNK in commercial cigarettes is increasing from the  
11 mid '70s; do you agree with that?

12 A Well, actually, he may have in earlier  
13 publications. But if I point you to the '98 Health  
14 Canada report, he has some additional data in there.  
15 And I would provide some degree of caution in terms  
16 of your generalization of his finding. That table

17 which you may be referring to has both NNK and  
18 benzo(a)pyrene data as a function of year. And as  
19 you probably know, they're plots by year of points  
20 with no variability. And the reason for that, it's  
21 a reflection not of the U.S. commercial market but  
22 of the measurement of those materials in a single  
23 brand picked up at a store near the American Health  
24 Foundation.

25 So I would just raise a word of caution, if you  
HALASZ REPORTING & VIDEO

22

1 will, in terms of precisely what that work is  
2 reflecting on.

3 Q Well, what cigarette was picked up?

4 A I don't know the answer to that.

5 Q Well, what does Philip Morris' own studies  
6 show about NNK as a function of, of time from the  
7 mid 1970s in its commercial products?

8 A I would say the data that I have seen both  
9 internally and that which has been reported in the,  
10 in the literature shows a range of levels of things  
11 like NNK. And those values, for example, I'll give  
12 you a mean plus and minus standard. It could be a  
13 standard error, Mr. Wilner, or it could be a  
14 standard deviation, I don't remember, but that value  
15 is 75 plus or minus 45. Depending upon the year and  
16 the kinds of cigarettes, that's the range in which  
17 those values have been picked up. And that -- those  
18 values may actually be represented in some table or  
19 some, some part of the Hoffman and Hoffman '96  
20 chapter of that FTC Number 7 Monograph. But it's  
21 consistent with the data published by IARC in their  
22 volume 38, 1986 monograph on tobacco as well. And I  
23 think it's also reiterated by Dr. Hoffman in the  
24 Consumer Product Safety Commission report.

25 Those are sort of the ballpark numbers that come  
HALASZ REPORTING & VIDEO

23

1 to mind. I would only caution that anybody in  
2 reading that needs to make sure that the examination  
3 of the release of those materials in smoke, that  
4 they know whether they're talking about filtered or  
5 non filtered cigarettes. A lot of the data that  
6 Hoffman and colleagues originally reported were in  
7 cigarettes in which -- that were not filtered,  
8 either because they had no filters or the filter was  
9 removed.

10 Clearly the introduction of filters on cigarettes  
11 provided a significant reduction in the deliveries  
12 of these tobacco specific nitrosamines in the smoke  
13 and therefore to the smoker, primarily because these  
14 materials are located in the particulate matter.  
15 And the kinds of filters that are generally used in  
16 the commercial market remove the particulate matter  
17 and therefore lower the tobacco specific  
18 nitrosamines in the smoke.

19 Q The figure you gave me, 75 to 45 nanograms  
20 per cigarette?

21 A Yes, sir. And that's in the smoke.

22 Q The -- what I asked you about was whether  
23 Philip Morris had -- or I will ask you about is  
24 whether Philip Morris can document in the smoke of  
25 its commercial brands, and for the purpose of this

1 question I'll focus on the Marlboro, the level of  
2 NNK that has existed in the commercial Marlboro  
3 since the mid 1970s up to today; does Philip Morris  
4 have that data?

5 A The only data I'm aware that they have  
6 that's been made public relates to I believe the  
7 Massachusetts department of health work on the  
8 commercial, on the commercial products. That's all  
9 that I'm aware of.

10 Q All right. Now, you said that's the only  
11 data that's been made public, but does Philip Morris  
12 have data that it has not made public?

13 A Not, not that I'm aware of.

14 Q So is it true, then, that Philip Morris did  
15 not, from the 1970s up til today, monitor the amount  
16 of NNK in its commercial Marlboro?

17 A I would say the date that we need to be  
18 looking at is the date that assays for those  
19 materials became available. And I believe that that  
20 date is 1978 or 1979. Having, having said that, I  
21 am not aware of any data, I don't recall seeing any  
22 data on those materials in, in Philip Morris  
23 commercial products.

24 Q Do you know why Philip Morris did not  
25 monitor the amounts of NNK in its commercial

1 Marlbors after it became technologically feasible  
2 to do so?

3 A I think other -- as I was saying earlier  
4 with my other references, other people have looked  
5 at cigarettes that are available, and that  
6 information has been published. And the range for  
7 those materials exists, not necessarily identifying  
8 Philip Morris products or Marlboro in the case of  
9 this specific question, but it is in line with  
10 what's commercially -- what's been commercially  
11 available in the --

12 Q But --

13 A In the United States.

14 Q Doesn't NNK in smoke depend upon the  
15 tobacco blend, among other things?

16 A Among, among other things, yes, sir.

17 Q And are all commercial cigarettes, do they  
18 all have exactly the same blend?

19 A No, they don't.

20 Q Are you saying that, is there a reason --  
21 let me ask you a different way.

22 Are there other factors that determine the amount  
23 of NNK in the smoke of commercial cigarettes besides  
24 the blend?

25 A Yes.

1 Q And they include what?

2 A The presence of the filter and the nature  
3 of a filter on the cigarette, the nature of the  
4 tobacco matrix and whether there are other materials  
5 like secondary amines present, the temperature at  
6 which the tobacco, the tobacco sees. I mean, there  
7 are at least, at least two pathways then described.

8 One is the transfer from the tobacco to the smoke of  
9 something like NNK. And the other is what's called  
10 piro-synthesis. That is, you take substrate  
11 materials, have them -- they're in the cigarette in  
12 some form. You provide heat and you create a  
13 material like, like NNK. Both pathways have been  
14 suggested and I believe there's data to support  
15 both, both of those. And depending on the specific  
16 conditions, one may be more prominent than another.

17 A third pathway has been hypothesized, and that  
18 is a bound form of NNK, which is then, then  
19 released. But I am less certain of the strength of  
20 that data, though it is within the realm of  
21 scientific possibility.

22 Q So if I wanted to find out the, the NNK  
23 levels in Marlboro, what public sources would I go  
24 to, according to you?

25 A Well, I, I believe, though I have not seen  
HALASZ REPORTING & VIDEO

27

1 the total Massachusetts Department of Health list,  
2 that you would find those numbers in that report  
3 which I believe is publicly available, Mr. Wilner.

4 Q Yes. And how would I find the NNK levels  
5 for Marlboro in the '70s, after it became feasible  
6 to do so after 1978 or thereabouts?

7 A I don't, I don't know how to answer -- I  
8 don't know where the answer to that question lies.

9 Q Now, has -- since we're on the subject of  
10 NNK, does -- is it your position that the tobacco  
11 specific nitrosamines in general and NNK in  
12 particular represent health hazards in the smoke of  
13 commercial cigarettes?

14 A I think that there is a possibility that  
15 they could represent a health hazard to humans,  
16 though the International Agency for Research on  
17 Cancer lists NNN and NNK as 2B, that is number two  
18 and letter B, carcinogens, which in English  
19 translates into possible human carcinogens. And in  
20 the hierarchy of the IARC, this International Agency  
21 for Research on Cancer, their number-one concern  
22 would be those that are known human carcinogens, of  
23 which these are not. The second would be two As,  
24 which are probable human carcinogens, which these  
25 are not. And so these are at the third level of

HALASZ REPORTING & VIDEO

28

1 possible human carcinogens. And I believe and  
2 Philip Morris believes that we should do whatever is  
3 necessary to remove or eliminate these materials  
4 from tobacco and smoke even though they are  
5 currently not listed as known human carcinogens.

6 Q What has Philip Morris done to investigate  
7 the question whether NNN and NNK and other tobacco  
8 specific nitrosamines are human carcinogens relevant  
9 to human health -- relevant to the health of the  
10 consumers of commercial cigarettes?

11 A That, that requires a slightly longer,  
12 longer answer and it involves at least two levels of  
13 discussion. One is the ability to remove indigenous  
14 tobacco specific nitrosamines from tobacco. And  
15 there is what I would describe as a very long, from  
16 a time scale, long history of work going on at

17 Philip Morris. And it continues, it continues  
18 today. And that deals with what I would call  
19 straightforward chemistry and agronomic type work,  
20 both involving the farmers and the people who cure,  
21 cure the leaf as well as the chemists and biologists  
22 in the laboratory. So that's, that's one level.

23 The second level involves the evaluation of the  
24 tobacco specific nitrosamines, primarily NNN and  
25 NNK, which are ranked the highest by IARC at least

HALASZ REPORTING & VIDEO

29

1 in terms of potential risk to humans, to try to  
2 understand what might be going on in the human  
3 situation. And actually, we're going to be talking  
4 to the Institute of Medicine next week on March 1st  
5 about some of our work. And it involves two  
6 sublevels of investigation. One is the  
7 identification of the proper bio marker for exposure  
8 to these materials. There are -- there have been  
9 several bio markers that have been put out in the  
10 literature or in other kinds of reports that have  
11 suggested what it is you need to look at. And our  
12 investigations, some of which have been published in  
13 the open literature, all of which will be presented  
14 to the Institute of Medicine, identifies what we  
15 believe to be the appropriate bio markers for, for  
16 exposure and provides a methodology for their  
17 identification/quantification. So that's one part  
18 of that.

19 Another part of that, and that has been presented  
20 at scientific meetings, whether it's the American  
21 Association of Cancer Research or the toxicology  
22 meetings, a series of other studies that have  
23 attempted to examine in a comparative fashion how  
24 these materials are handled by rodent tissues. And  
25 it's in the rodents that all of the work on the

HALASZ REPORTING & VIDEO

30

1 carcinogenicity of these materials have developed.  
2 And comparing the rodent metabolism which would  
3 include activation or deactivation or adduct  
4 formation or bio markers with what would happen in  
5 human, human tissue.

6 And so this data will also be presented to the  
7 IOM next week. But much of it has been at least  
8 presented at scientific meetings and I have seen  
9 some of the draft manuscripts on this. But I'll try  
10 to make it short. If you look at precision cut lung  
11 or liver, whether it's from human material or from  
12 the rodents, and you look at NNK, and this would be  
13 radioactive NNK or radioactive NNN, at substrate  
14 levels that would be equivalent to what would be  
15 present in the lung of a smoker or in the body of a  
16 smoker, and you look at the metabolic profile, what  
17 you see is a pattern of metabolites, and they have  
18 been quantified and identified using GC mass  
19 spectroscopy, what you see is a pattern that is  
20 totally different in humans than what you see in the  
21 rodents in which you get lung cancer by routes of  
22 administration.

23 So I think what this work is suggesting is -- has  
24 led to, one, identification of the right bio marker  
25 for exposure, which we think is important to look at

1 for smokers. And we're suggesting this to the, to  
2 the Institute of Medicine, but also to try to help  
3 us and the people who are involved and interested in  
4 this, try and rank order the potential health  
5 significance of these kinds of materials. There's  
6 no doubt in our mind that these materials cause  
7 cancer, lung cancer in animals that are exposed, and  
8 they pose a risk to humans and we're trying to  
9 remove it. We're just trying to get a better  
10 understanding of, of this in terms of our ability to  
11 evaluate what it is we're actually going to do here  
12 as it might relate to the smoker.

13 Q Did you indicate -- as I remember in  
14 Memphis, you indicated that the Professor Stephen  
15 Hecht had made an error in his calculations of the  
16 quantity of NNK to which an habitual smoker is  
17 exposed to over a lifetime in his -- and had made an  
18 error in his comparison of the amount on a per  
19 kilogram body mass basis, with that shown to induce  
20 cancer in rodents. Before I make that question any  
21 longer, do you recall testifying, first of all, on  
22 that general issue in Memphis?

23 A On the general issue, yes. I don't, I  
24 don't recall specifically saying that Dr. Hecht had  
25 made an error on that. If I did, then I may have

1 misstated. I was more referring to Dr. Hoffman. Of  
2 course Dr. Hecht at that time was in that same  
3 laboratory at the American Health Foundation. But I  
4 don't know if I said Dr. Hecht made, made the  
5 calculation error. But we have -- we continue to  
6 look at that. And for all of the rodent assays that  
7 have been done and the levels of NNN or NNK that  
8 have been given, we assume a hundred percent  
9 absorption of the NNK in a cigarette, in cigarette  
10 smoke by the smoker. And when you do that and  
11 normalize that for a 70 kilogram person and then  
12 look at either the number of years a person would  
13 have to smoke 2 packs a day or the number of packs a  
14 person would have to smoke over 40 years, what you  
15 basically arrive at is an astronomical picture that  
16 I'm not aware that anybody can, can achieve in, in  
17 the real world.

18 I'm not talking about three packs a day for 40  
19 years, but some of the numbers that have been  
20 derived rise up to a thousand, it may take a  
21 thousand years for somebody smoking two packs a day  
22 to get that dose that was used in that particular  
23 rodent assay. And by rodent assay I'm capturing the  
24 data on hamsters, rats and mice.

25 Q Did you testify that the researchers which

1 include Hoffman, not to differentiate between  
2 Hoffman and Hecht was not my purpose, but the  
3 researchers including Hoffman had acknowledged that  
4 they made a calculation error?

5 MR. SLATER: All right. Let me just object  
6 to the, to the question, the form of the question on  
7 the grounds that you're really questioning him about

8 what he recalls testifying to, about in Memphis.  
9 Correct?  
10 MR. WILNER: That's true.  
11 MR. SLATER: I don't think that's a proper  
12 question, but go ahead and answer, Doctor.  
13 THE WITNESS: I, I have not seen my  
14 testimony since I think it was in the spring of 1999  
15 that we met each other in Memphis, Mr. Wilner. And  
16 I can't remember with a degree of specificity what,  
17 what I said in that regard. But I do know I made  
18 commentary on a number of things that had been  
19 stated originally that were no longer felt to be  
20 true. Whether I said it about that and/or other  
21 things, I can't recall it at this time. But --  
22 BY MR. WILNER:  
23 Q All right. Well let me go on. As you sit  
24 here today, is it your belief that Professor Hecht  
25 has acknowledged making an error in the quantitative  
HALASZ REPORTING & VIDEO

34

1 calculation of NNK dosage in humans?  
2 A I, I don't believe that I mentioned  
3 Dr. Hecht's name in that regard in, in Memphis. And  
4 so -- and nor do I believe he was, he was the person  
5 I may have been referring to. So the answer to the  
6 question is I don't believe I said, I said that, but  
7 I don't recall. I've not looked at my testimony  
8 since last, since --  
9 Q That's why I went on to just ask you as you  
10 sit here today, do you believe that Professor Hecht  
11 has acknowledged making an error.  
12 A I'm not sure he even made a statement.  
13 Q All right. Do you believe that Dr. Hoffman  
14 as acknowledged making an error in calculation?  
15 A I don't recall. I, I don't remember  
16 specifically what I said in Memphis. All I can tell  
17 you is that what has been stated about the  
18 relationship of NNN or NNK dose in smokers compared  
19 to what the animals actually received is an error.  
20 Q Right. Now what I'm trying to get --  
21 forget Memphis. I'm asking do you believe, are you  
22 testifying today that Dr. Hoffman has acknowledged  
23 making an error?  
24 A I know that there has been acknowledgement  
25 of some, or corrections in a more polite way, of  
HALASZ REPORTING & VIDEO

35

1 things that were published or stated regarding NNN  
2 and NNK. Specifically as it relates to that, I  
3 don't recall, because there were a number of things  
4 that were said and published that are no longer held  
5 to be true.  
6 Q Are you familiar with Dr. Hecht's article  
7 which occurred in the Journal of the National Cancer  
8 Institute July 21st, 1999 titled, "Tobacco Smoke  
9 Carcinogens and Lung Cancer"?  
10 A Yes, I am.  
11 Q All right. So let me ask you if you agree  
12 or disagree with this statement by Dr. Hecht on page  
13 1196. It says "Cigarette smoke contains substantial  
14 amounts of NNK, and the total dose experienced by a  
15 smoker in a lifetime of smoking is remarkably close  
16 to the lowest total dose shown to induce lung cancer

17 in rats."  
18 A Now, I don't remember that specific  
19 sentence, but I'm sure you're reading it correctly.  
20 Q I am reading it correctly.  
21 A I'm sure you are. My point is remarkably  
22 close in the absence of providing the precise  
23 quantitative information is not what I would call a  
24 scientific response to the question. If you sit  
25 down and calculate the actual dose and run through

HALASZ REPORTING & VIDEO

36

1 the calculations that we have done, you get a  
2 remarkable disparity here. So in the absence of  
3 having a table of data that he's speaking from, I  
4 would disagree with his, his comment. But he hasn't  
5 presented any calculations or numbers to, to really  
6 evaluate.  
7 Q Well, you're familiar with the table  
8 appearing on page 1197?  
9 A I don't have the paper --  
10 Q Okay.  
11 A I don't have the paper in front of me.  
12 Q So it's your recollection that Professor  
13 Hecht has not given or presented the calculations  
14 which form the basis of his statement?  
15 A No, I'm not saying that. I'm not saying  
16 that at all.  
17 Q Okay.  
18 A I'm saying for the, for the use of what I  
19 would call subjective descriptors for what's going  
20 on, I don't see the data that would support that  
21 statement.  
22 Q But you -- all right. And is that a way of  
23 saying you disagree with it?  
24 MR. SLATER: Object to the form of the  
25 question.

HALASZ REPORTING & VIDEO

37

1 THE WITNESS: Yes, I thought I'd said that  
2 already.  
3 BY MR. WILNER:  
4 Q Okay. So now the question is, based on --  
5 your disagreement is based, as I understand it, on  
6 work that was done by Philip Morris which has --  
7 which is going to be presented in, in a week? Is  
8 that basically it?  
9 A No, sir.  
10 Q All right.  
11 A No, sir. What we're presenting in a week  
12 is the published data that has been -- by people  
13 like Hecht and Dr. Hoffman and others looking at all  
14 the rodent assays with, with these materials and  
15 then taking the dose, and they were given by several  
16 different routes of administration, either orally or  
17 sub Q or intraperitoneally, and then converting  
18 those doses to what you would find in a cigarette  
19 using Dr. Hoffman's published numbers on NNK  
20 delivery, for example, and assuming a hundred  
21 percent absorption by the smoker, and then doing a  
22 body weight calculation assuming the average person  
23 in the United States may weigh 70 kilograms. But if  
24 you want to use 55, you can use 55. It's just the  
25 basis, a basis for comparison.



1 Q Well, are you saying that Philip Morris did  
2 its own rodent studies or did not do them?

3 A No, what -- I'm sorry if I'm not being  
4 clear. What I'm saying is Philip Morris took the  
5 data that currently exists in the published  
6 literature and took the numbers from those studies  
7 and calculated them, as I've just tried to describe  
8 to arrive at the conclusion that I generally tried  
9 to describe to you.

10 Q Did Philip Morris do its own rodent studies  
11 on NNN and NNK?

12 A What do you mean by -- I'm talking about  
13 cancer studies. Are you saying did Philip Morris do  
14 cancer studies with NNK, NNK and NNN in rodents?

15 Q That's a fair question, and let's say yes,  
16 that's my first question. Did Philip Morris do  
17 cancer studies involving rodents in NNN and NNK?

18 A Outside of tobacco smoke, I'm not, I'm not  
19 aware of, I'm not aware of it. Within the context  
20 of tobacco smoke that contains NNK and NNN, the  
21 answer is yes.

22 Q And when you say tobacco smoke that  
23 contains NNN and NNK, you mean inhalation  
24 experiments?

25 A Yes, sir.

1 Q Which were done where?

2 A INBIFO, for example. Some were also done  
3 at the American Health Foundation.

4 Q I'm talking about Philip Morris stuff now.  
5 The INBIFO inhalation experiment, when were they  
6 first performed?

7 MR. SLATER: Excuse me, Mr. Wilner, I don't  
8 think the witness had completed his answer before  
9 you started your next question.

10 THE WITNESS: When you say Philip Morris,  
11 you mean in a Philip Morris facility and not funded  
12 by Philip Morris, am I correct?

13 BY MR. WILNER:

14 Q I mean, yes. For purposes of this  
15 question, I mean in a Philip Morris facility.

16 A Okay. Philip Morris has conducted  
17 inhalation studies in, in rodents before I got to  
18 the, before I got to the company. And we have one  
19 that was a 24-month inhalation exposure with a  
20 six-month post-inhalation exposure that just ended  
21 this Christmas. Some of it has been presented and  
22 published in toxicology peer reviewed literature and  
23 at toxicology meetings and at cancer, cancer  
24 research meetings.

25 Q You said that they have been doing

1 inhalation studies since before you got there?

2 A Yes, sir.

3 Q And that a 24-month study was just  
4 published. Now, what about the studies that were  
5 done before you got there? Where are they?

6 A No, I didn't say the 24-month study was  
7 published. I said parts of it were published.

8 They're actually still in the process of evaluating.  
9 The post-inhalation just ended in Christmas. The  
10 publications will come from this study out over the  
11 next, next several, several years.

12 Q Where are the earlier studies?

13 A Some of them, the ones that derived from  
14 this have been published and/or, and/or presented.

15 Q Some of them have been published?

16 A Yeah. We're still evaluating this  
17 particular, this particular study. Evaluation is  
18 still, is still going on. But that, those parts of  
19 the study that we have finished either have been  
20 published or presented or in the process of being  
21 submitted for publication. It's going to take years  
22 for all of this to, to reach in final form the  
23 scientific community. It's an enormous undertaking.

24 Q All right. When did you first get to  
25 Philip Morris?

HALASZ REPORTING & VIDEO

41

1 A For all intents and purposes, 1989.

2 Q All right. So studies were -- that were 10  
3 years ago, or 11 years ago rather?

4 A That's right.

5 Q All right. So studies were already being  
6 done when you got there; is that right?

7 A They had done inhalation studies in rodents  
8 with tobacco smoke.

9 Q All right. And where are the results of  
10 those studies?

11 A Those studies exist within the archives and  
12 documents of INBIFO, though I can't be sure that  
13 they don't exist in outside sources as a result of  
14 litigation or whether they exist in some form in, in  
15 Richmond in the central file document. When I  
16 reviewed those studies, I was at INBIFO reviewing  
17 them. So where they, they might be placed in the  
18 different parts of the universe in today's  
19 electronic world I can't speak to at this time.

20 Q You, you have reviewed them yourself,  
21 though?

22 A Yes, sir.

23 Q Now, you mentioned before on a theoretical  
24 basis some observations that the pathway by which  
25 NNN and NNK, or the pathways, are metabolically

HALASZ REPORTING & VIDEO

42

1 activated may differ between rodents and humans; did  
2 I get that right?

3 A In a quantitative sense, not in a  
4 qualitative sense. So when you go back and you look  
5 at the Hecht review in JNCI or even some of the  
6 older Hoffman papers, they talk about qualitative  
7 similarities between humans and animals. And my  
8 view and the data that I've seen supports a  
9 qualitative similarity, and the differences where  
10 they exist are quantitative differences. In  
11 scientific jargon they are in no small way related  
12 to what are called differences in the KM and Vmaxes  
13 of these enzymes which relate to the affinity of  
14 these different enzymes and the maximal rate of  
15 conversion. And those activities are specifically  
16 driven by the substrate levels, the NNK levels, if

17 you will, that those enzymes see at any point in  
18 time.

19 This observation is a universal observation, not  
20 unique to NNK or NNN. And it is, it is something  
21 that the body, and not just the human body but  
22 biological systems use in controlling the metabolism  
23 of a wide variety of materials. And it is of  
24 enormous toxicological significance and is part of  
25 what I would call a very strong argument that's been

HALASZ REPORTING & VIDEO

43

1 going on for 20 years with Dr. Bruce Aimes on one  
2 side talking about the problems with the maximal  
3 tolerated dose, where you give animals massive  
4 concentrations of things and you see cancers or  
5 other adverse events, and it's strictly related to  
6 the fact that you're seeing phenomena that are not  
7 representative of what the organism or the human  
8 might see. And he's been one of the strong  
9 advocates of this. And there are more toxicologists  
10 and pharmacologists and biochemists than not that  
11 understand this and appreciate this important  
12 difference.

13 So it's not a qualitative difference, it's a  
14 quantitative difference that is very important in  
15 terms of what metabolites of anything, including NNK  
16 and NNN, you're going to see.

17 Q What control technology in the commercial  
18 Marlboro has been specifically designed to control  
19 tobacco specific nitrosamines, if any?

20 MR. SLATER: Object to the form of the  
21 question. It's also repetitive.

22 THE WITNESS: The answer that I gave for  
23 the aldehydes is precisely the kind of answer I'm  
24 going to give here, is a general reduction of all of  
25 these materials because people have, over the last

HALASZ REPORTING & VIDEO

44

1 50 years, identified materials that they believe are  
2 important in smoke to remove. And sometimes those  
3 materials that -- the scientific community changes  
4 their mind about that material and something else  
5 pops up.

6 So our feeling has been that the most  
7 prudent approach is to try to remove as many of  
8 these things as you can at least in a general way.  
9 So tobacco specific nitrosamines are found in the  
10 particulate phase of smoke and filters which have  
11 been used and effectively demonstrated to reduce the  
12 particulate phase, the tar phase, is a general  
13 approach for doing that. And that's been in the  
14 commercial market for decades.

15 In addition, Philip Morris is working with  
16 the farmers and the other agricultural people to  
17 modify the practices associated with growing the  
18 tobacco and curing the tobacco to further try and  
19 reduce these products. We're not unique in terms of  
20 this. There are other companies that are trying  
21 similar types, similar types of approaches. But  
22 your question to me and my answer really falls  
23 exactly in line with my response to the aldehydes  
24 and any other material that you can come up with  
25 that has been identified at this particular point in

1 time. Our feeling is that the most prudent approach  
2 is a general reduction approach, unless you have  
3 something very specific that you can do that will  
4 work and can be implemented and utilized in the  
5 commercial marketplace.

6 Q Well, what about the agronomic changes in  
7 the tobacco? Have agronomic changes in tobacco been  
8 deliberately accomplished on Marlboro commercial  
9 cigarettes to reduce tobacco specific nitrosamines?

10 A I think for whatever reason, you're  
11 focussing on Marlboro. The agronomic practices that  
12 our leaf department, amongst others, has been  
13 working on for decades applies to all of our, all of  
14 our commercial products and is not unique to, to  
15 Marlboro, unless I'm missing, missing a point in  
16 this questioning. It is something we apply, we try  
17 to apply to all of our products.

18 Q Well, I don't -- I didn't care whether it's  
19 to all of them or not. I'm just focussing on one  
20 thing at a time. But tell me, then, the specific  
21 agronomic techniques that you feel have been applied  
22 to all your products or to Marlboros, whichever you  
23 want to answer, that are specifically in place to  
24 control tobacco specific nitrosamines and when they  
25 were first put in place.

1 A Well, I can't tell you when these things  
2 were put in place, but I can tell you these kinds of  
3 changes impact more than just tobacco specific  
4 nitrosamines. So if you're talking about the  
5 utilization of fertilizers in the growing of the  
6 product, there has been a long standing effort to  
7 try to control how these kinds of things are used by  
8 the, by the farmers. So that would have an impact  
9 on nitrates which may or may not be related to  
10 tobacco specific nitrosamines but are clearly  
11 related to other things in the gas phase, NOXs,  
12 which have also been identified as a potential,  
13 potential health problem.

14 So this kind of behavior which has been going on  
15 for quite a long time, though I can't give you a  
16 date in which it started, has an impact not just on  
17 any one particular smoke constituent, if you will,  
18 but hopefully on, on more than one.

19 Q Well --

20 A Another, another modification that's been  
21 going on, and I can't tell you when it started, and  
22 we're not alone in this, is moving from procuring  
23 certain kinds of tobacco from using the historical  
24 combustion curing process to a heat transfer. I've  
25 not seen this but it's been described to me as being

1 akin to a heat pump in which you provide heat to the  
2 system and exchange, exchange that as you would for  
3 your heat pump in your house without directly  
4 exposing the tobacco to, to combustion products.  
5 And again, we're, Philip Morris is not alone in  
6 terms of trying to introduce this in a general, in a  
7 general way.

8       Those are two examples that I can think of off  
9       the top of my head at this point, Mr. Wilner.  
10      Q       Well, how many -- how much tobacco bought  
11       by Philip Morris is now cured by virtue of this heat  
12       transfer curing process?  
13      A       I'm the wrong person to ask that. I do not  
14       know.  
15      Q       So now wouldn't that affect the way the,  
16       the cigarette delivers carcinogens and potential  
17       carcinogens to the host?  
18      A       Are we off tobacco specific nitrosamines  
19       and on to something else, here?  
20      Q       Not necessarily. I think you indicated  
21       that it was -- I was asking you about tobacco  
22       specific nitrosamines, so I assume you were  
23       answering me about that. But --  
24      A       Yes, well but now you've said carcinogens.  
25       And in terms of how I specified the World Health  
                  HALASZ REPORTING & VIDEO

48

1       Organization's characterization of tobacco specific  
2       nitrosamines, at least the two that achieve the  
3       highest level of risk, they're possible animal  
4       carcinogens. And I just don't want, you know, to  
5       somehow misrepresent the fact that at this point in  
6       time they're recognized as something other than  
7       possible animal -- I'm sorry, possible human  
8       carcinogens. Sorry for that --  
9      Q       Well, can you answer the question with  
10       possible human carcinogens in the place of whatever  
11       I asked you?  
12       MR. SLATER: Could you repeat the question,  
13       please, Mr. Wilner, for my benefit and maybe the  
14       witness' benefit as well?  
15   BY MR. WILNER:  
16      Q       Yeah. You testified, I think, just a  
17       minute ago that you didn't know whether this heat  
18       transfer or curing process had been put into effect.  
19       MR. SLATER: No, I don't think that was his  
20       testimony.  
21       MR. WILNER: Well, then let me ask him.  
22   BY MR. WILNER:  
23      Q       Has this heat transfer process been put  
24       into effect?  
25      A       I think it is being put into effect.

HALASZ REPORTING & VIDEO

49

1      Q       Well, when was it first put into effect?  
2      A       And I thought I answered that question by  
3       telling you I don't know.  
4      Q       Okay. Now, you are intending to testify as  
5       an expert on the design of the Philip Morris  
6       products, commercial products, including in that the  
7       delivery of carcinogens or possible carcinogens from  
8       those products; are you not?  
9      A       Yes, sir.  
10     Q       And wouldn't the question of whether the --  
11       how the tobacco was cured play a role in evaluating  
12       that issue?  
13     A       I thought I answered that question, and the  
14       answer was yes.  
15     Q       Okay. So and yet you don't know or have  
16       not asked to the extent to which commercial products

17 have benefitted from any such heat transfer  
18 technology?

19 A At this point, I think my answer is yes to  
20 that as well, other than to say this, this is being  
21 implemented.

22 Q Well, let me ask you about the fertilizers.  
23 You said that there had been, for years there had  
24 been efforts to, to make some kind of agronomic  
25 change involving the use of fertilizers in tobacco;

HALASZ REPORTING & VIDEO

50

1 is that fair?

2 A Amongst other things, that's fair, yes,  
3 sir.

4 Q All right. So I'm curious, first of all,  
5 what exactly are these changes, and secondly, how  
6 much of the commercial products or the commercial  
7 tobacco bought has been changed as a result of these  
8 efforts?

9 A The, the program which still exists today  
10 and still goes on is a dynamic program. And I would  
11 say that at least within the products that I'm aware  
12 of, it has benefitted all, all the products; all the  
13 products that are sold in the United States that I  
14 believe we sell and maybe some of the other  
15 manufacturers sell, have benefitted from what is  
16 currently called good agronomic practices that  
17 involves more than just how you use fertilizers and  
18 what fertilizers you use and the frequency with  
19 which you apply the fertilizers and the role of  
20 climactic conditions in terms of their, their usage,  
21 all of which has an enormous impact on the kinds of  
22 things that you need to worry about with regard to  
23 deliveries of NOXs in smoke, for example.

24 So I would say my position would be right now  
25 that the vast majority of tobaccos that are used in

HALASZ REPORTING & VIDEO

51

1 the manufacture of cigarettes by Philip Morris in  
2 the United States and probably other manufacturers  
3 have all benefitted from these, these changes. And  
4 what I'm talking about is not unique to Philip  
5 Morris. I've been --

6 Q I didn't ask what was unique to Philip  
7 Morris, so that's fine. But you're speaking today  
8 as an expert who worked for Philip Morris; is that  
9 correct?

10 A Yes, sir.

11 Q Okay. That's, that's why I'm directing  
12 your questions to Philip Morris, not to ask you  
13 whether it's anything unique about it, just it's  
14 part of your expertise. The -- now my question is  
15 if, in fact -- well, let me ask it a different way.

16 Does Philip Morris intend to, to use low nitrate,  
17 low nitrogen tobacco in its commercial products?

18 A Low nitrogen tobacco?

19 Q Yeah.

20 A I'm sorry, and I don't mean this in a  
21 pejorative sense, but tobacco without nitrogen  
22 is -- doesn't make any, any scientific sense at all.  
23 I mean --

24 Q I didn't say without, if that was what was  
25 bothering you. I didn't say nitrogen free.

1 A Oh, I'm sorry. I'm sorry. Without  
2 nitrogen, yes, that doesn't make any sense.

3 MR. SLATER: Maybe for my benefit and  
4 perhaps for the witness' benefit, are you talking  
5 about low in the use of nitrogen fertilizers or low  
6 in nitrate fertilizers as opposed to low nitrate or  
7 nitrogen in the tobacco itself?

8 MR. WILNER: Either or both, whatever  
9 impacts the final product.

10 THE WITNESS: I think the answer to the, to  
11 the question is based upon the current understanding  
12 of how green plants incorporate nitrogen and  
13 nitrates and the oxygen fixing bacteria that exists  
14 in the roots of green plants, including tobacco, it  
15 is what I would call at one level a waste of money  
16 to use high nitrate fertilizer in healthy soil and  
17 healthy plants since the plants basically can take  
18 nitrogen, which is, as you know, almost 80 percent  
19 of the atmosphere, and fix it. A certain degree of  
20 nitrate fertilizer is clearly important.

21 And so it's of economic benefit to the  
22 farmer to use as little as possible to increase  
23 their profitability. So I don't think it's much of  
24 a brainer, if you will, to convince a farmer not to  
25 use high nitrate, high nitrate fertilizers. Not to

HALASZ REPORTING &amp; VIDEO

1 use any nitrate in the fertilizer, I'm a little bit  
2 out of my, my field in terms of total agronomics,  
3 but I have gardened over the last 35, 35 years, and  
4 I would say you need a little bit of nitrate to get  
5 the plants to produce something that is utilizable.

6 Q Well, what is the content -- what does  
7 Philip Morris tell farmers about the utilization of  
8 fertilizers that you were talking about earlier  
9 about with reference to the program that has been  
10 ongoing for years?

11 A And I thought I tried to explain some of  
12 that in terms of good agronomic practices that would  
13 include under what kinds of climactic conditions you  
14 should use what kinds of fertilizers. So in, in a  
15 scenario in which you might be going through a  
16 drought like or a low, low precipitation situation,  
17 you would clearly be in a situation where you would  
18 want to alter how the fertilizer was being applied.  
19 Because in those kinds of situations, you might get  
20 more inappropriate incorporation or non helpful  
21 incorporation of these expensive fertilizers into  
22 parts of the plant that are really not doing  
23 anything for the tobacco plant and may create  
24 problems in terms of smoking.

25 Q How do you -- how does Philip Morris

HALASZ REPORTING &amp; VIDEO

1 communicate to farmers on these agronomic practices?

2 A At least two levels. One is through the  
3 state land grant universities that are funded both  
4 by the federal government and by the companies, and  
5 they work directly with the farmers. And the people  
6 from the Philip Morris leaf department spend a lot  
7 of time out in the field with the farmers and at the

8 farmers' organizations talking about, I think they  
9 have continuing education programs on this. And I  
10 believe through at least the state land grant  
11 universities, some of this is actually monitored  
12 from a chemical, chemical perspective as well.

13 Q Does Philip Morris monitor the nitrate  
14 content of incoming tobacco?

15 A I don't know the answer to, to that  
16 particular question.

17 Q Does Philip Morris measure the, the tobacco  
18 specific nitrosamine content of its commercial  
19 products on a continuous basis?

20 A No, sir.

21 Q Could the amount of tobacco specific  
22 nitrosamines be affected by the nitrate content of  
23 the incoming tobacco?

24 A Actually, that's, that's one in which  
25 people have speculated on this particular question.

HALASZ REPORTING & VIDEO

55

1 So, I mean, anything is, is possible.  
2 Scientifically I'm not, I'm not sure there's  
3 convincing data to say that it is. Having said  
4 that, if you're going to worry about nitrate, the  
5 thing I worry about and I do worry about has to do  
6 with the NOXs that would be in the smoke. And what  
7 Philip Morris has done is developed a commercial  
8 denitrification process that removes the vast  
9 majority of nitrates from, from the tobacco.

10 So I would say nitrate is important. It's  
11 clearly important in terms of NOXs. It's probably  
12 not that important for tobacco specific  
13 nitrosamines, but nevertheless we have a commercial  
14 process that removes the vast majority of the  
15 nitrate.

16 Q When has that -- when was that instituted?

17 A I can't give you a date certain, but it was  
18 clearly long before, long before I got to Philip  
19 Morris.

20 Q And this applies to all the tobacco that  
21 Philip Morris processes?

22 A I can't --

23 Q -- for all its commercial brands?

24 A I can't answer that question. I don't  
25 know, for instance, if, if anything that might have

HALASZ REPORTING & VIDEO

56

1 oriental tobacco would go, go through that or --

2 Q What is the name of this process?

3 A The name, it's a denitrification process.  
4 I don't know what the jargon would be for it within,  
5 within the company. I do know I have, I have been  
6 there while they were doing it and I was involved in  
7 making recommendations about the disposal of the  
8 nitrate crystals which are a by-product of that  
9 particular, of that particular process. And it  
10 turns out that when you do that, you end up with  
11 sufficient nitrates that it is of -- was at least of  
12 some commercial value for those people selling soil  
13 conditioners and fertilizers. And there was a point  
14 in time many years ago in which that's how we got  
15 rid of that nitrate by-product.

16 I think today that material is disposed of in a



17 landfill type, type scenario.

18 Q If, in fact, the amount of incoming nitrate  
19 in tobacco, if you or Philip Morris is not convinced  
20 that that is a factor in the production of tobacco  
21 specific nitrosamines, then what agronomic  
22 practices, if any, are in Philip Morris' view,  
23 responsive to the control of tobacco specific  
24 nitrosamines?

25 A Yeah, I think that's an excellent, an  
HALASZ REPORTING & VIDEO

57

1 excellent question. And we've had a major research  
2 program in that area. And we are finding now, and  
3 this is part of what we're trying to implement, is  
4 here you have an agricultural product, it grows out  
5 in the field, and it has associated with it  
6 microorganisms, bacteria and yeast and things like  
7 that.

8 It turns out that our data strongly support the  
9 notion that it is the interaction between these  
10 microorganisms and the tobacco that results in the  
11 generation of indigenous tobacco specific  
12 nitrosamines. And what we're attempting to do is  
13 somehow, and we have some methodologies that are,  
14 are being developed, trying to incorporate what  
15 we've learned in the laboratory into something that  
16 could be adopted on a more global, global way to  
17 eliminate or reduce this microbial processing that  
18 either is responsible for or contributes to the  
19 tobacco specific nitrosamines in the curing, in the  
20 curing process. Because as you know, the green leaf  
21 of the tobacco does not contain tobacco specific  
22 nitrosamines. So it's somewhere between when that  
23 leaf is harvested and when it's processed that at  
24 least part of the tobacco specific nitrosamines are  
25 formed. And that would be in addition to the

HALASZ REPORTING & VIDEO

58

1 circumstances in which you might get piro-synthesis.

2 Q All right. So as far as this, this  
3 bacterial issue, is it fair to say that that has not  
4 been implemented in commercial products as yet?

5 A I think that's fair to say, yes, sir.

6 Q And in terms of the piro-synthetic issue, is  
7 there specific control technology built into the  
8 Marlboro cigarette to control piro-synthesis of  
9 tobacco specific nitrosamines?

10 A I would, I would say again as a general  
11 response, the conditions under which piro-synthesis  
12 appears to be a significant player in the production  
13 of NNK or NNN in smoke does not exist in Philip  
14 Morris cigarettes.

15 Q Does it exist in any cigarettes?

16 A I don't know.

17 Q Why doesn't it exist in Philip Morris  
18 cigarettes?

19 A Because the information we have -- if I  
20 could step back for a moment and talk about a  
21 cigarette that we attempted to commercialize that  
22 removed 97 percent of the nicotine plus some other  
23 things, the so-called "Next" product. When, when we  
24 did that, we found that we could remove, it wasn't  
25 really surprising, some of the indigenous tobacco

1 specific nitrosamines.

2 Now, when those cigarettes were smoked, what we  
3 found was that the amount of, for the sake of this  
4 discussion, NNK in the smoke was much higher than  
5 you would have predicted based upon the indigenous  
6 levels of NNK in the smoke. So here's a situation  
7 where transfer -- it was something other than  
8 transfer going on.

9 And in speaking to the organic synthetic chemists  
10 on this, their explanation based on the data that  
11 they had seen was you had, in this extraction  
12 process, created an environment with high secondary  
13 amines. And the high secondary amines in the  
14 presence of the other substrates for NNK was  
15 responsible for what was going on. And that was a  
16 result of the supercritical carbon dioxide  
17 extraction procedure, which was only used for the  
18 creation of, of that cigarette.

19 So what, what I'm trying to, what I'm trying to  
20 say is those conditions created an environment that  
21 is not found in at least the cigarettes, commercial  
22 cigarettes I'm aware of where you would have this  
23 imbalance, if you will, in the high levels of  
24 secondary amines.

25 MR. SLATER: Mr. Wilner, when you get a  
HALASZ REPORTING & VIDEO

1 chance at a breaking point, I'd like to take a short  
2 break. It won't take but a minute.

3 MR. WILNER: Well, let's take a five-minute  
4 break and stay on the line.

5 MR. SLATER: Fine.

6 THE VIDEOGRAPHER: We are going off the  
7 record. The time is now 11:31 a.m.

8

9 (Recess)

10

11 THE VIDEOGRAPHER: This is the beginning of  
12 tape two, deposition of Dr. Carchman. We are back  
13 on the record at approximately 11:38 a.m.

14 BY MR. WILNER:

15 Q Okay. Would you agree, Dr. Carchman, that  
16 the fact that you observed the probable  
17 piro-synthesis of TS&As in the -- in a situation with  
18 the "Next" cigarette where you had an excess of high  
19 secondary amines does not in itself indicate that no  
20 piro-synthesis could occur in -- by other mechanisms  
21 not associated with high secondary amines?

22 A I think it doesn't exclude it. And as I  
23 tried to say, oh, an hour or so earlier when we were  
24 talking about this, it would appear that the  
25 majority of tobacco specific nitrosamine, NNN and

1 NNK at least that are in smoke are there by  
2 transfer. Now I also said there was some, some  
3 amount that was there by piro-synthesis. The point  
4 about this secondary, secondary amines was that the  
5 piro-synthesis in that particular situation was much,  
6 much greater than really had been anticipated or  
7 seen by other people.

8 Q Do you accept that there are substances,  
9 substances or, a substance or substances in  
10 cigarette smoke which have the capacity for and  
11 which do induce mutations in somatic or body cells  
12 of users of cigarettes?

13 A Well, it's a long, a long question. Are  
14 there things in smoke that produce mutations? Yes.  
15 Are there things in smoke that produce mutations  
16 in -- under conditions in which people use the  
17 product? I would say there's data out there to  
18 support, to support that.

19 Q And do you accept it as an expert that  
20 these -- that regular users are foreseeably affected  
21 by mutations occurring from agents in tobacco smoke?

22 A I, I believe as a scientist and as an  
23 expert that it is foreseeable that under the  
24 conditions in which people might be exposed in  
25 smoke, that it would be reasonable. And I think

HALASZ REPORTING & VIDEO

62

1 some of these studies have been done to demonstrate  
2 mutations in cells derived from people.

3 Q Now, would it, would it also be expected  
4 that such mutations would occur after -- well, let  
5 me ask you this way.

6 When would such mutations occur after the  
7 initiation of exposure to cigarette smoke?

8 A Well, actually, that's a question that I  
9 think sort of remains open at the present point  
10 because you have to tell me which materials you're  
11 talking about. I would believe that some materials  
12 that are found in smoke that have been shown to  
13 cause mutations, especially in more simple systems,  
14 can do so very quickly. Others require other events  
15 to intercede before you would see a mutation. And  
16 then even if you would see a mutation, when you look  
17 for it would determine whether you found it or not.

18 Some mutations have been shown to persist.  
19 Others are very transient. And depending upon which  
20 specific compound you're talking about, some require  
21 metabolic activation. Some require the -- you have  
22 to have other kinds of things present, like  
23 inflammatory cells, that would produce products that  
24 would cause chronic irritation and inflammation and  
25 then lead to a mutation which, if it survives, could

HALASZ REPORTING & VIDEO

63

1 result in an initiated cell.

2 I hope I answered your question.

3 Q Yes. And in some people, I think you said,  
4 or in some situations, you would need the presence  
5 of inflammatory cells or the inflammatory process;  
6 is that a fair statement?

7 A That's what I said, yes.

8 Q Right. I'm just -- and then -- and isn't  
9 that something that's foreseeably present in some  
10 number or some subset of the users of cigarettes?

11 A I would say that irritation and  
12 inflammation is a component of what occurs in human  
13 subjects. But the animal data that has been  
14 published basically demonstrates that these effects  
15 are reversible, whereas the current thinking is that  
16 if you had an initiated cell, a cell that may be

17 mutated, though mutation is only one way to get to a  
18 cancer cell, that there are lots of different ways  
19 to, to get there. And some of them are permanent,  
20 some of them are reversible.

21 So where you are in the process and what else is  
22 going on is clearly important. I am a believer in  
23 the philosophy that many people in this area have  
24 taken that you're dealing with a multi-step process,  
25 and it's not simply a linear step A to B to C; there

HALASZ REPORTING & VIDEO

64

1 is a time or temporality component in which not just  
2 the sequence is important but the timing is  
3 important. And other factors, some of which we only  
4 suspect, are also playing a role in this situation.  
5 But it is multi, it is multi-step.

6 Q And how would you explain if you had  
7 complete knowledge of it, in other words, if you  
8 could go and look at the details of the cells  
9 theoretically of someone who had begun to smoke and  
10 that we knew later would develop lung cancer, and  
11 let's say a 20-year period of product use; how would  
12 you describe the events on a cellular level during  
13 that time period while they were exposed to the  
14 smoke but prior to the time they manifested lung  
15 cancer?

16 A Yeah, that is one of the holy grail  
17 questions out there. I guess if you were a  
18 pathologist, you would describe this in a series of  
19 cellular events from hyperplasia to metaplasia to  
20 dysplasia to carcinoma. I mean, so that's how a  
21 pathologist might, might describe it.

22 A molecular biologist, biochemist might look at a  
23 number of regulatory sites sometimes called tumor  
24 suppressor genes, but there are lots of other  
25 factors or oncogene activation. I mean, there are

HALASZ REPORTING & VIDEO

65

1 just pages and pages of these different things --

2 Q Sure.

3 A -- that have been identified.  
4 Unfortunately, you know, at least for me at the  
5 present time, you're dealing with something that  
6 becomes evident, what, 20 or 25 years after what  
7 might be the initiation event. And in some people,  
8 even though they're initiated, it never progresses  
9 to anything that would provide any kind of clinical  
10 identification or impairment of the individual.

11 In terms of a specific marker that you can put,  
12 like pin the tail on the donkey, if you will, is  
13 there something that can fingerprint this, a lot of  
14 people are looking. There is only one material in  
15 tobacco smoke that is unique to tobacco smoke that  
16 has a chance, at least at the present time, for  
17 doing, for doing that. But everything else that you  
18 find in smoke is found everywhere else in, in life.

19 I remember a paper came out in science several  
20 years ago, Dennisenko, and they had fingerprinted  
21 benzo(a)pyrene as the, I think the media was the  
22 smoking gun. Unfortunately benzo(a)pyrene is  
23 present in everything, from the food, the air and  
24 the, and the water. So there really is no  
25 specificity. There were some other issues with,

1 with what they were talking about, but there was no  
2 really unique way at the present time of doing it.

3 A lot of people are spending a lot of time and  
4 money trying to address the question that, that  
5 you've raised. And we are very interested in  
6 knowing what, what that is. And we're supporting  
7 research in that area and carrying out research in  
8 that area and publishing in that area.

9 You know, the key assumption which may be a bit  
10 naive on everybody's part is that there is going to  
11 be one thing in smoke that's going to be the bad  
12 bullet, if you will. And I think that's probably  
13 not going to turn out to be correct, which is  
14 another reason why I think, to the extent that you  
15 can generally remove or reduce things, that is the  
16 more, more prudent approach.

17 Q How, how would, how would a user in the  
18 present state of human knowledge know whether that  
19 user, once initiated, would promote to invasive  
20 cancer or would not?

21 A I mean, these are, these are questions of  
22 biblical, biblical proportions. If you could  
23 identify even what the susceptible population is,  
24 that would be a major advance. And people are, have  
25 been looking very, very hard for what are called

HALASZ REPORTING &amp; VIDEO

1 genetic polymorphisms to try to figure out, you  
2 know, why certain people get certain disease, why  
3 certain smokers get lung cancer and not other  
4 smokers, even if they smoke more, more cigarettes;  
5 what is the reason why you see this kind of  
6 expression pattern the way you do. And it is one of  
7 the very serious questions that people, including  
8 Philip Morris, are very much, very much interested  
9 in finding the, the answer to at the present time.

10 In --

11 Q I guess --

12 MR. SLATER: Excuse me. Let him finish the  
13 answer, please.

14 MR. WILNER: Well. Okay. I mean, look,  
15 we've had answers that have gone on a long time. I  
16 wasn't being impolite.

17 MR. SLATER: Well, let him just finish his  
18 answer now. I mean, the witness has a right to  
19 finish his answer.

20 MR. WILNER: Well, I guess, although it  
21 seems like some of these answers are lectures in a  
22 lot of different fields. But I have not been  
23 impolite, so please let's just continue.

24 But if we could, you know, if we can get  
25 the question -- the answer a little bit more

HALASZ REPORTING &amp; VIDEO

1 focused, it will be faster.

2 MR. SLATER: I understand your point. If  
3 you'd just let him finish this answer. Have you  
4 finished, Doctor?

5 THE WITNESS: All I was going to say, in  
6 the absence of having the answers to the kinds of  
7 questions that you've raised, I think the public

8 health message is absolutely correct and clear in  
9 terms of smoking and disease.

10 BY MR. WILNER:

11 Q I'm sorry, I guess I didn't -- what public  
12 health message do you mean?

13 A The warning labels that are on every pack  
14 of cigarettes sold in the United States.

15 Q And, and is that the only -- is that Philip  
16 Morris' understanding and belief, that those -- that  
17 that message is correct?

18 A That message is the correct public health  
19 message to the population of people that use the  
20 product or are considering using the product.

21 Q Now, the warning label that you mentioned  
22 doesn't mention anything about addiction or even  
23 habituation. Would that be something that --

24 A I --

25 Q -- the public ought to know about?

HALASZ REPORTING & VIDEO

69

1 A I think the public does know about that.

2 Q Through what method would they know about  
3 that?

4 A Well, aside from the 1988 surgeon general's  
5 report, I think through the general media, both  
6 television, press, radio, magazines, I think the  
7 general public's view of this is pretty generally  
8 well known.

9 Q And is that something that Philip Morris  
10 would agree told to the general public?

11 A I think we've said, we've said that to  
12 Senator Hatch in 1997, and I think the second step  
13 of that is precisely what we've said on our website.  
14 And I believe there either is or will be an 800  
15 number for people that don't have computers or have  
16 access to computers that basically reiterates that  
17 particular point.

18 Q Did Philip Morris change its position on  
19 whether cigarettes caused cancer at anytime from  
20 19 -- from the 1970s until the present?

21 A I want to be able to say the answer is, is  
22 yes. I believe it's, I believe it's yes. I'm just  
23 trying to think about the time line you've, you've  
24 mentioned. And --

25 Q If --

HALASZ REPORTING & VIDEO

70

1 A I think, I think that's correct. But I  
2 can't say with absolute certainty, you know, when,  
3 what date that was, or dates.

4 Q Well, without giving me absolute certainty,  
5 what decade was it that Philip Morris changed its  
6 mind about whether cigarettes caused cancer?

7 A I guess the -- I would argue with you about  
8 "changed its mind." I would say that Philip Morris'  
9 position on smoking and health has evolved from the  
10 1950s to today from what was said publicly in the  
11 1950s, what was said in the 1970s, what was said in  
12 the 1980s to what is being said today. I don't  
13 believe Philip Morris has said, in my opinion, the  
14 same thing over the last 40 or 50 years. Its  
15 statements have changed as its understanding of the  
16 science has changed.

17 And more recently, as a result of our attempt to  
18 go beyond that and not do anything that would  
19 undermine the public health message, and that was  
20 the driver, if you will, for the letter to Senator  
21 Hatch and the website, to continue not to do or say  
22 anything that would undermine the public health  
23 message regarding smoking cigarettes.

24 Q What is the significance of telling  
25 anything to one particular senator or another?

HALASZ REPORTING & VIDEO

71

1 A Well, I think Senator Hatch might somehow  
2 object to that particular characterization. But  
3 that got media coverage in terms of what it was  
4 Philip Morris did. It didn't get quite, in my  
5 opinion, quite the media coverage that the website  
6 got. And I would say the media did not connect as  
7 well as they should the two events. But at least in  
8 my mind, they're a logic -- one is a logical  
9 extension of the other.

10 And the fact that there is or will be an 800  
11 number to try to make this, these points and these  
12 messages, if you will, information available to the  
13 general public, I would say that's quite  
14 significant.

15 Q Did Philip Morris ever deny that cigarettes  
16 caused cancer?

17 A I think to the extent that they, they said  
18 there wasn't enough information to make the  
19 conclusion that it did, I think there are public  
20 statements to that effect that I have seen,  
21 basically paraphrasing now, if you will, that the  
22 scientific evidence does, does not allow you to  
23 conclude that smoking causes lung cancer or other  
24 diseases. That was something I remember from the  
25 '50s. I would say that is in the current situation,

HALASZ REPORTING & VIDEO

72

1 and current I mean going back many years now, no  
2 longer true. And Philip Morris no longer says that,  
3 to my knowledge.

4 Q Well, Philip Morris was a member of the  
5 Tobacco Institute in 1979?

6 A I, I don't know for a fact, but I would, I  
7 would believe so.

8 Q And, and, I mean, I'm not trying to -- as  
9 far as we know, Philip Morris has never -- has been  
10 in the Tobacco Institute from the beginning until,  
11 you know, until the end. I don't know if the  
12 Tobacco Institute is still around, but let me ask  
13 you this: Are you aware of Philip Morris having  
14 written the Tobacco Institute at anytime to disavow  
15 anything the Tobacco Institute said?

16 A The Tobacco Institute, it's my  
17 understanding, one, doesn't exist anymore. Two,  
18 it's a trade, a trade association. And three, I  
19 have not had any involvement with the Tobacco  
20 Institute. So I don't know how to answer that  
21 question other than the way I have.

22 Q Okay. I guess the only thing I was curious  
23 about, if you knew of any disavowment.

24 MR. SLATER: Object to the form of the  
25 question, disavowing of what?

1 MR. WILNER: Of what I just said, of Philip  
2 Morris having disavowed the remarks or statements of  
3 the Tobacco Institute at any time.

4 MR. SLATER: I think that's been asked and  
5 answered.

6 MR. WILNER: It just wasn't clear to me  
7 when he said he didn't know about it. I guess I  
8 want to know whether he is aware of any such  
9 disavowal, regardless of whether he worked directly  
10 with the Tobacco Institute, that's all.

11 THE WITNESS: I'm not aware of it.

12 BY MR. WILNER:

13 Q Okay. So when you say -- when I was asking  
14 you about what Philip Morris has said and done over  
15 the years, were you including the remarks of the  
16 Tobacco Institute in that answer or not?

17 A Since I wasn't aware of it, I would say I  
18 wasn't including it, assuming whatever it was they  
19 said that I may or may not have seen.

20 Q Oh, okay. So I guess, let me just ask you  
21 again. If you've answered, I apologize. But I'm  
22 not sure I understand the answer if you have. When  
23 was the first time that you can document that Philip  
24 Morris accepted the proposition that cigarettes  
25 caused cancer?

1 A If I, if I might have a moment, I believe  
2 that Mr. Cullman, Joe Cullman, who was the CEO  
3 chairman of Philip Morris, testified before congress  
4 and was asked about the smoking of cigarette and was  
5 it a risky product and could it cause disease. And  
6 my recollection was he, he, he did say, he did  
7 answer that question more in the affirmative than in  
8 the negative.

9 Was it specifically related to cancer? I don't  
10 know. But if my recollection is correct, it may  
11 have been. But even if it was just in general  
12 disease, my feeling would be that when one talks  
13 about cigarette smoking, cancer is one of the  
14 prominent diseases one talks about. I want to say  
15 that was sometime in the, in the '70s, but I can't,  
16 I can't tell you, tell you when.

17 I'm also aware, I think, of a statement in one of  
18 the annual reports to the Philip Morris  
19 stockholders. Maybe Mr. William Murray was the  
20 chairman at the time. And he made some comments in  
21 there specifically about cigarette smoking being a  
22 risk for a number of diseases. And then in the  
23 early '90s Mr. Steven Parrish, an executive with  
24 Philip Morris on an interview, I think the  
25 television show was Nightline, basically said Philip

1 Morris believes that cigarette smoking is a risk  
2 factor for and may indeed cause lung cancer, heart  
3 disease and other diseases.

4 Q So --

5 A That is my recollection, as imperfect as it  
6 probably is, in terms of my quick review of people  
7 that might have made statements or did make



8 statements, written or verbally, in a number of  
9 different venues.

10 Q Right. And my question, then, is: Is it  
11 true, based on what you said, that as of sometime in  
12 the '70s, which was the first date you suggested  
13 based on Cullman's testimony, that Philip Morris  
14 internally accepted that cigarettes caused cancer?  
15 Is that true?

16 A I don't know. I don't think that's what I  
17 said. All I said was that was, that was  
18 representative of public expressions. When they  
19 might have arrived at those conclusions, I clearly  
20 wasn't, I clearly wasn't around to, to give you, to  
21 give you an answer to that.

22 So I don't know when Philip Morris felt that way.  
23 All I can tell you as imprecisely as, as I've been  
24 able to, unfortunately, when I think certain things  
25 were said and by whom.

HALASZ REPORTING & VIDEO

76

1 Q Well, I understand. And then, and of  
2 course if Mr. Cullman made expressions which you  
3 interpreted as being indicative of a belief that  
4 cigarettes caused cancer on or about the mid 1970s,  
5 as you indicated, would that not also indicate that  
6 at least as of that time, there -- the company  
7 accepted that cigarettes caused cancer?

8 MR. SLATER: I object to the form of the  
9 question. You're asking the witness to really be a  
10 mind reader and a crystal ball gazer, I think. I  
11 don't think that's an appropriate question. You're  
12 just asking him to speculate.

13 BY MR. WILNER:

14 Q Can you answer?

15 A No. I, I wish I could, but I can't. I  
16 mean --

17 Q Maybe my question isn't clear. You  
18 indicated that Mr. Cullman told congress sometime in  
19 the mid '70s words to the effect that it was  
20 accepted or that he believed cigarettes caused  
21 cancer. Did I get that wrong, or is that right?

22 A I think you got it wrong. It's probably  
23 just because of the fact that we're sitting here,  
24 you talking into a phone and me talking into a  
25 phone.

HALASZ REPORTING & VIDEO

77

1 I think Mr. Cullman's response was to a specific  
2 question relating to whether or not he agreed with  
3 the warning labels that existed on the product.

4 Q Well --

5 A And I think, I think his answer, I think my  
6 recollection is, was that in general, he agreed  
7 with, with the warning labels. Now I'd have to go  
8 back. I mean, it's been years since I've looked at,  
9 looked at that, but that's my, that's my  
10 recollection.

11 I can't tell you which congressional committee or  
12 who the chairman was, but I believe it related to  
13 whether or not he agreed with the warning labels at  
14 whatever time this, this was.

15 Q Well, did Mr. Cullman or any, or let me --  
16 I'll just ask you directly. In the mid '70s did

17 Philip Morris accept that cigarettes caused cancer?  
18 A I think to the, to the extent that he  
19 responded to that the way he did, I would say he  
20 agreed with the warning label. Whether he accepted  
21 it or the company accepted it, I wasn't, I was not  
22 around. I don't know exactly what they were  
23 thinking, what the, what the underlying reasons in  
24 terms of the processes they went through to arrive  
25 at that answer. So I can't answer that question for

HALASZ REPORTING & VIDEO

78

1 something that happened 20 or 30 years ago when I  
2 wasn't around.

3 MR. WILNER: Okay. That's all the  
4 questions I have.

5 MR. SLATER: Okay. We are completed. I  
6 have no questions. I think the witness would  
7 obviously like to read and sign the deposition.

8 THE WITNESS: Yes.

9 MR. SLATER: And so we'll -- you'll make  
10 available a copy of the transcript, Madam reporter?

11 THE REPORTER: Yes.

12 THE VIDEOGRAPHER: The deposition is  
13 concluded at 12:06 p.m.

14

15 SIGNATURE RIGHTS RESERVED

16 (Deposition concluded at 12:06 p.m.)

17 \* \* \* \* \*

18

19

20

21

22

23

24

25

HALASZ REPORTING & VIDEO

79

1 CHANGES REQUESTED TO THE DEPOSITION OF:

2 RICHARD A. CARCHMAN, Ph.D.

3 TAKEN ON: February 24, 2000

4

5 Page/Line: From/To: Reason:

6

7

8

9

10

11

12

13

14

15

16

17

18 \_\_\_\_\_  
19 RICHARD A. CARCHMAN, Ph.D.

20

21 COMMONWEALTH OF VIRGINIA, to wit:

22 Subscribed to before me

23 this \_\_\_\_\_ day of \_\_\_\_\_, 2000

24

25 \_\_\_\_\_  
Notary Public

My commission expires: / / .

1 COMMONWEALTH OF VIRGINIA AT LARGE, to wit:

2 I, Gwenda E. Applegate, Court Reporter, Notary  
3 Public in and for the Commonwealth of Virginia at  
4 Large, and whose commission expires November 30, 2003,  
5 do certify that the aforementioned appeared before me,  
6 was sworn by me, and was thereupon examined by  
7 counsel; and that the foregoing is a true, correct,  
8 and full transcript of the testimony adduced.

9 I further certify that I am neither related to  
10 nor associated with any counsel or party to this  
11 proceeding, nor otherwise interested in the event  
12 thereof.

13 Given under my hand and notarial seal at  
14 Charlottesville, Virginia, this 24th day of February,  
15 2000.

16

17

18

19

20 Gwenda E. Applegate, Notary Public  
21 Commonwealth of Virginia at Large

22

23

24

25